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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,599	07/26/2001	Anton C. Rothwell	NAI1P022/01.106.01	8712
28875	7590	02/23/2005	EXAMINER	
Zilka-Kotab, PC			NAJJAR, SALEH	
P.O. BOX 721120			ART UNIT	PAPER NUMBER
SAN JOSE, CA 95172-1120			2157	

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/916,599	<b>Applicant(s)</b> ROTHWELL ET AL.	
	<b>Examiner</b> Saleh Najjar	<b>Art Unit</b> 2157	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 10-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10-15 and 17-23 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>November 4, 2004</u> . | 6) <input type="checkbox"/> Other: _____  |

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1. This office action is responsive to the amendment filed on October 21, 2004. Claims 1, 20, 21, and 22 were amended. Claims 7-9 were canceled. Claim 23 is newly added. Claims 1-6, and 10-23 are pending. Claims 1-6, and 10-23 represent method, program and system for intelligent SPAM detection system using statistical analysis.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 23 recites the limitation "adaptive linear" in line 1. There is insufficient antecedent basis for this limitation in the claim.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 4-6, 11-15, and 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horvitz et al., U.S. Patent No. 6,161,130 in view of Kirsch et al., U.S. Patent No. 6,772,196.

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Horvitz teaches the invention substantially as claimed including a utilizing a probabilistic classifier to automatically detect junk/SPAM mail (see abstract).

As to claim 1, Horvitz teaches a method for detecting unwanted messages, comprising:

Receiving an electronic mail message (see figs. 1-3; col. 9, lines 19-25, Horvitz discloses receiving an email message for analysis);

decomposing text in the electronic mail message (see col. 11, lines 55-60, Horvitz discloses breaking the message into units/tokens),

gathering statistics associated with the text using a classifier (se col. 9, lines 50-55; col. 10, lines 10-15, Horvitz discloses that a feature vector is extracted and associated with the message); and

analyzing the statistics for determining whether the electronic mail message is an unwanted message (see col. 9, lines 55-60; col. 12, lines 45-50, Horvitz discloses that the classifier is trained to recognize SPAM).

Wherein the statistics gathered using the statistical analyzer includes results of a message header field analysis (see col. 9-10).

Horvitz fails to teach the limitation wherein the statistics gathered using the statistical analyzer include results of an analysis of a uniform resource locator (URL ) in the electronic mail message text and analysis of e-mail addresses in the electronic mail message text.

However, Kirsch teaches an electronic mail filtering system and method (see abstract). Kirsch teaches analysis of a uniform resource locator (URL ) in the electronic mail message text and analysis of e-mail addresses in the electronic mail message text (see col. 9-10, Kirsch discloses analyzing the mail message for presence of URLs and certain predefined email addresses within the text ).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Horvitz in view of Kirsch so that results analysis include the presence of URL and email addresses in the message text. One would be motivated to do so to filter out junk mail with typical characteristics that include certain URLs and email addresses.

Horvitz does not explicitly teach the limitation of a statistical analyzer. Horvitz does teach that a classifier module is used to output a probabilistic confidence level for incoming messages based on the extracted feature vector (see col. 10, lines 10-15; col. 13-14).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Horvitz by specifying the classifier module as a statistics analyzer since the same functionality of classifying e-mail messages is achieved.

As to claim 4, Horvitz teaches the method as recited in claim 1.

Horvitz does not explicitly teach the claimed limitation wherein the statistics gathered using the classifier include a number of uniform resource locators (URLs) in the text.

Horvitz does teach that the feature detector detects whether the message includes handcrafted feature (see col. 11, lines 20-65).

However, Kirsch teaches an electronic mail filtering system and method (see abstract). Kirsch teaches analysis of a uniform resource locator (URL) in the electronic mail message text and analysis of e-mail addresses in the electronic mail message text (see col. 9-10, Kirsch discloses analyzing the mail message for presence of URLs and certain predefined email addresses within the text).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Horvitz in view of Kirsch so that results analysis include the presence of URLs in the message text. One would be motivated to do so to filter out junk mail with typical characteristics that include certain URLs.

As to claim 5, Horvitz teaches the method as recited in claim 1.

Horvitz does not explicitly teach the claimed limitation wherein the statistics gathered using the classifier include at least one telephone number in the text.

Horvitz does teach that the feature detector detects whether the message includes handcrafted feature (see col. 11, lines 20-65).

However, Kirsch teaches an electronic mail filtering system and method (see abstract). Kirsch teaches analysis of a telephone number in the electronic mail message

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text (see col. 9, line 25, Kirsch discloses analyzing the mail message for presence of telephone numbers within the text ).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Horvitz in view of Kirsch so that results analysis include the presence of telephone numbers in the message text. One would be motivated to do so to filter out junk mail with typical characteristics that include certain telephone numbers.

As to claim 6, Horvitz teaches the method as recited in claim 1.

Horvitz does not explicitly teach the claimed limitation , wherein the statistics gathered using the classifier include results of an analysis of character type.

Horvitz does teach that the feature detector detects whether the message includes handcrafted feature (see col. 9; col. 11, lines 20-65).

However, Kirsch teaches an electronic mail filtering system and method (see abstract). Kirsch teaches analysis of a character type in the electronic mail message text (see col. 9, lines 1-50, Kirsch discloses analyzing the character types of characters within the email text).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Horvitz in view of Kirsch so that results analysis include the presence of certain character types in the message text. One would be motivated to do so to filter out junk mail with typical characteristics that include certain character types indicative of SPAM.

As to claim 11, Horvitz teaches the method as recited in claim 1, wherein the statistics are placed in a results table, wherein entries in the table are passed as inputs to a neural network engine (see col. 15, lines 10-20).

As to claim 12, Horvitz teaches the method as recited in claim 1, wherein the statistics are sent to a neural network engine, wherein the neural network engine compares the statistics to predetermined weights for determining whether the electronic mail message is an unwanted message (see col. 15, lines 55-65).

As to claim 13, Horvitz teaches the method as recited in claim 12, wherein the neural network engine is taught to recognize unwanted messages (see col. 14, lines 1-

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67; col. 15, lines 1-67, Horvitz discloses that the classifier is trained to recognize SPAM).

As to claim 14, Horvitz teaches the method as recited in claim 13, wherein examples are provided to the neural network engine, wherein the examples are of wanted messages and unwanted messages, and each of the examples is associated with a desired output (see col. 13-16).

As to claim 15, Horvitz teaches the method as recited in claim 14, wherein each of the examples are processed with statistics by the neural network engine for generating weights for the statistics, wherein each of the weights is used to denote wanted and unwanted messages (see col. 15, lines 45-65).

As to claim 17, Horvitz teaches the method as recited in claim 15, wherein logic associated with the neural network engine is updated based on the processing by the neural network engine (see col. 16-18).

As to claim 18, Horvitz teaches the method as recited in claim 17, wherein the neural network engine is updated to recognize an unwanted message, the message is identified as an unwanted message, the features of the message that make the message unwanted are identified, and the identified features are stored and used by the neural network to identify subsequent unwanted messages (see col. 21-22).

As to claim 19, Horvitz teaches the method as recited in claim 1, wherein the neural network engine analyzes previous user input for determining whether the message is unwanted (see col. 15, lines 55-65).

Claims 20-21 do not teach or define any new limitations above claims 1-6, 10-19 and therefore are rejected for similar reasons.

5. Claims 2-3, 10, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horvitz et al. in view of Kirsch et al. further in view of Stockwell et al., U.S. Patent No. 6,144,934.

Horvitz teaches the invention substantially as claimed including a utilizing a probabilistic classifier to automatically detect junk/SPAM mail (see abstract).

As to claim 2, Horvitz teaches the method as recited in claim 1, wherein the statistics gathered using the classifier module include a number of words capitalized (see col. 9, lines 20-50, Horvitz discloses that words capitalized can be identified and accounted for in a message).

Horvitz and Kirsch do not explicitly teach the claimed limitation of ratio of words capitalized to a total number of words. Horvitz discloses that various features in email are identified indicative of SPAM that include whether a predetermined word is capitalized (see col. 9, lines 20-50).

However, Stockwell teaches a binary filter using pattern recognition used to filter unwanted messages (see abstract). Stockwell teaches the limitation of analyzing ratio of words capitalized to a total number of words (see col. 6, table I).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination of Horvitz and Kirsch in view of Stockwell by specifying analysis of ratio of the number of capitalized words to total number of words to detect SPAM. One would be motivated to do so since the ratio of capitalized words to total number of words represents SPAM e-mail characteristics/features.

As to claim 3, Horvitz teaches the method as recited in claim 1.

Horvitz and Kirsch fail to teach the limitation wherein the statistics gathered using the classifier module include punctuation to word ratio. Horvitz discloses that various features in email are identified indicative of SPAM that include whether a text includes a series of punctuation marks (see col. 9, lines 20-50).

However, Stockwell teaches a binary filter using pattern recognition used to filter unwanted messages (see abstract). Stockwell teaches the limitation of analyzing ratio of punctuation to word (see col. 6, table I).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination of Horvitz and Kirsch in view of Stockwell by specifying analysis of ratio of punctuation to word to detect SPAM. One would be motivated to do so since the ratio of punctuation to word represent SPAM e-mail characteristics/features.



Claims 10 and 22 do not teach or define any new limitations above claims 2-3 and therefore are rejected for similar reasons.

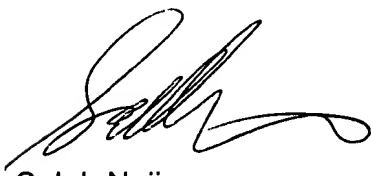
6. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Applicant's arguments with respect to claims 1-6, and 10-23 have been considered but are moot in view of the new ground(s) of rejection.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saleh Najjar whose telephone number is (571)272-4006. The examiner can normally be reached on Monday - Friday 9:00am-6:00pm w/ first Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (703)308-7562. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Saleh Najjar

Primary Examiner / Art Unit 2157